

Historic, archived document

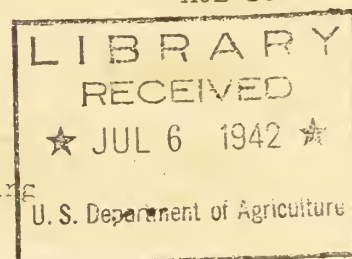
Do not assume content reflects current scientific knowledge, policies, or practices.

7932
H2H8
Me. 167
5/15/42

ACE-167

INFORMATION SHEET ON DEHYDRATED GREENS

The Dehydration Committee
U. S. Bureau of Agricultural Chemistry and Engineering
U. S. Department of Agriculture



PRODUCTS:

Under the classification of "greens" are included spinach, kale, chard, beet tops and mustard greens.

FORM:

The leaves of the several varieties are preferably dried whole. The different vegetables must not be dried together or sold as mixtures.

The dehydrated products must be prepared under modern sanitary conditions, in accordance with best commercial practice and Federal and State Regulations.

VARIETIES:

Insufficient information is now available to recommend specific varieties. Those generally used as fresh vegetables are believed to be satisfactory for drying.

PREPARATION:

Greens may be received in bunches with their roots still attached, or loose in crates with the roots cut off. In either case, the greens should be run under cold water sprays as they are loaded on the conveyor belts. This treatment removes considerable mud and sand. The greens are then sorted and trimmed to remove the roots, stems, and all damaged and discolored leaves, after which they are thoroughly washed in a revolving washer or tanks of water to remove the remaining sand and dirt. In trimming chard, the entire stem is removed up to the leaf. In trimming spinach, kale, and mustard greens, care must be taken not to leave more than 10% of the stems.

Undue bruising of the unblanched leaves will result in large losses of vitamin C (ascorbic acid). Prolonged storage of spinach, kale, and mustard greens will cause loss of ascorbic acid; a 50% reduction in vitamin C may result from 6 to 24 hours storage, depending upon the conditions of storage.

Packing crates should not be stacked close together, as this may cause overheating.

TRIMMING LOSSES:

Trimming losses for spinach are 45-65%; for kale 56-60%; for mustard greens 30-40%; and for chard 47-55%.

2 - Information Sheet on Greens

BLANCHING:

The following blanching time in flowing steam at not less than 190° F. is recommended; spinach 2 minutes; chard 3 to 4 minutes; mustard greens 2 minutes; kale 2 minutes. Blanching should be continued until the midribs are translucent.

TRAYING:

The material can be spread on the drying surface at the rate of 1/2 to 3/4 lb. per square foot.

DRYING TEMPERATURES:

Finishing temperatures should not exceed 180° F.

MOISTURE CONTENT:

The moisture content should not exceed 4% when packed ready for shipment.

YIELD:

The yield, based on the fresh unprepared material, will be as follows: spinach 5.5 to 6%; kale 3 to 5%; mustard greens 8 to 9%; chard 4 to 5%.

VITAMIN CONTENT:

If properly prepared and dried from freshly harvested material, 100 grams of the fresh dried vegetable will contain approximately the following amounts:

Spinach	-	40 milligrams pro-vitamin A (carotene)
		750 micrograms vitamin B ₁ (thiamin)
		1150 micrograms vitamin B ₂ (riboflavin)
		150 milligrams vitamin C (ascorbic acid)
Kale	-	16 milligrams pro-vitamin A (carotene)
		500 micrograms vitamin B ₁ (thiamin)
		900 micrograms vitamin B ₂ (riboflavin)
		300 milligrams vitamin C (ascorbic acid)
Mustard greens-		50 milligrams pro-vitamin A (carotene)
		400 milligrams vitamin C (ascorbic acid)
Swiss chard -		3.0 milligrams pro-vitamin A (carotene)
		550 micrograms vitamin B ₁ (thiamin)
		1120 micrograms vitamin B ₂ (riboflavin)
		125 milligrams vitamin C (ascorbic acid)

No guarantee should be given on the vitamin content of the dehydrated product.

3 - Information Sheet on Greens

If further detailed information is desired, inquiries should be addressed to

The Dehydration Committee
Bureau of Agricultural Chemistry and Engineering
U.S. Department of Agriculture
Washington, D. C.

or to

The Dehydration Committee
Bureau of Agricultural Chemistry and Engineering
U.S. Department of Agriculture
800 Buchanan Street
Albany, California.

SEP 19 1942

